



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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At the **5 September** 2002 meeting of the SBMS will be a K6JEY session on frequency measurement and calibration. We will have the mixer kits for the 24 GHz project, thanks to Dave and Ken. Next up is the PIC board and parts. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

Last meeting: Welcome to new member Pat Coker N6RMJ of Lancaster. Mike, W6YLZ had picked up a number of feet of copper WR-42 waveguide per the previous meeting want list. Joonho, HM1AI had a number of wr-42 flanges for sale. The Pcom mixer part kits are slowly coming together and hopefully will be available next month. Doug, K6JEY talked about items to have in your vehicle when out roving during the contests. Thanks Doug. Several pieces of test equipment were auctioned off during the meeting (HP 342 noise figure meter and AIL 75 noise figure meter and HP 415 SWR meter), which helped the Society budget. 21 people present.

Tune Up Party- 17 people arrived at the Fairview Park in Costa Mesa on 27 July to check out their gear. This was a great time to see the other guy's gear that you had communicated with over several times in previous years. Present were: Bill, WA6QYR; Chuck, WA6EXV; Glenn KE6HPZ; Kerry N6IZW; Ken, WB6DTA; Ed, W6OYJ;

Dick, WB6DNX; Greg, K6QPV; Mark KA6PUW; Larry, K6HLH, Doug, K6JEY; Art, KC6UQH; Robbie KB6CJZ; Dennis, WA6NIA; John KJ6HZ; Kurt, K6RRA; Chris N9RIN. Kerry and Ed had carried up the test pole from which we could send and received and get an idea of ERP and MDS of our rig. Ed has put the results on the San Diego part of the SBMS web pages. Now you can compare how well your rig operates against others in the group. Left over K6VLM estate hardware and N6IZW extra parts were out on the lawn to pick up and take home. Thanks to all who made the event fun. Nice to be in the 79-degree beach weather than the 100+ of the upper Mojave Desert.

Scheduling

September 5 K6JEY session on frequency measurement and calibration.

September 14-16, 1800Z - 0300Z - ARRL September VHF QSO Party

September 21-22, 8 AM-8 PM - ARRL 10-GHz Cumulative Contest

October 3 24 GHz testing and equipment review. Bring your rig and get it tested.

October 24-27 - Microwave Update 2002/Eastern VHF-UHF combined Conference sponsored by N.E.W.S.

November 7 WA6JBD program on Network Analyzers.

December 5 5.7 GHz gear report and testing.

Wants and Gots for Sale

No new items were listed at the last two meetings. Pete, W6DXJ in San Diego is moving so had a number of things on the SBMS reflector for sale. Chuck, WA6IGP was also cleaning out his San Diego shop and had a list on the reflector.

Activity reported at the 1 August SBMS meeting- Doug, K6JEY was at the tune up party and will be working on a new feed for his dish; Mel, WA6JBD has a 24 GHz wideband rig running and the 10 GHz rig is ready for the contest; Dick, WB6DNX had both 10 and 24 GHz rigs to tune up party and has built a 24 GHz to 3 GHz down converter for use with his spectrum analyzer to see a little higher in frequency; chuck, WA6EXV built an feed for Doug and has been fixing broken parts on the 1200 to 2400 translator; Bill, WA6QYR built a 24 GHz narrowband rig but it didn't function at the tune up party so back to the soldering iron; Gary, W6KVC moved into new place; Ken, WB6DTA built a couple of DSS and has been helping other get on the air; Mike, W6YLZ is rebuilding his 10 GHz rig; Dave WA6CGR has been helping others fix problems in their rigs and has a new Macom dish and 25 w rig, and has loaner rigs out for the contest; Dennis, WA6NIA went to the tune up party and has both 10 and 24 GHz rigs on air; John, KJ6HZ was at the tune up party and has a 24 GHz rig in work; Chris, N9RIN was at the tune up party with a 10 GHz rig; Joonho, HM1AI passed his US license exam; ----BIB has a 10 GHz antenna; Pat N6RMJ has a SAM rig and made his first 10 GHz contact and the dish fell over; Dick, K6HIJ went to Sam's estate sale and now has goodies; Larry, K6HLH was at the tune up party, has new tower up from where he can work the contests; Jeff, KN6VR has new house coming along; Glenn, KE6HPZ made the tune up party with two rigs.

ANOTHER GRID SQUARE EXPEDITION -- DN73

Early on the morning of 30 July 2002 I set out for DN73. The route took me north on I-25 through Wheatland to Douglas, WY. At Douglas, I traveled north on WY-49 to Bill. Bill is a wide place in the road with a post office and is mostly a railroad center. The line is 3 tracks wide and has extensive coal traffic. After I left Bill, the route passed a rest stop and started an easy grade up. Near the top of the hill there are 3 microwave towers. The road turns onto a good gravel road at mile marker 49. At the towers there is plenty of room to get off the road and set up. There are cows roaming freely in the area. Driving time to the site is about 3.75 hours from my QTH. The grid square is DN73HJ. I set up and called Bill (K0RZ) on 433.1 MHz. He heard me, but the signals were not

strong. He turned on his 800w EME station and that really helped. He was now s0 to s5 with lots of flutter and QSB. I ran 50w to my 14 element long yagi. During the morning I worked Dave (W6OAL) and Don (N0UGY) on 433.1 We started the microwave contacts on 902.105. The +.105 was due to a strong random carrier at Bills on 902.100. I worked Bill with good signals (5-3-9) on CW. I then worked Dave with (4-1-9) signals. There was a lot of fading and flutter on the signals on 902.

The next microwave shot was on 3456.1. I used my 'tri-band' dish feed. (I figured if the signals were too bad, I would put in the 'real' feed) I worked Bill with (4-1-9) signals on CW. I tried with Dave and Don, but was not successful. No signals were heard.

We moved on the 2304. This should be a 'piece of cake'. Not So!!! Signals were very weak and faded out completely most of the time. I put in my 'real' feed, but that did not help too much. Bill was still weak to gone!!

We found a correlation between the signals on 433.1 and 2304. When 433 peaked, so did 2304. Since the signals were peaking in bursts (probably aircraft scatter), I asked Bill to put on his high speed keyer with our call signs and his grid square. He did this and I was able to get some good bursts and copy calls and grid. I don't know how fast the CW was, but it all came through in a very short burst. I answered with CW as fast as I could send with the hand key and Bill got the calls and grid. (I had my keyer, but did not have to use it) I asked him to put an 'R' on his keyer and we had a contact!!!

We tried on 5760, but no signals were heard on either end. The band had gotten worse as the morning went on. It was now 11:30 and the signals from Bill's 'big gun' were now about S1 max. Perhaps if we had tried when I first arrived, it would have been better. Since 902 was the priority frequency, we did not do it.

I packed up and traveled back to I-25 and down to exit 100. There are 3 microwave towers on a nice hill west of the freeway. There is a road, but it has a gate and is not accessible. There is a frontage road on the east side of I-25, which goes south, and there is a microwave tower there. There is a large shoulder on the west side of the road. I parked the truck at a 45-degree angle with room to spare. I set up 902.105 and had a nice contact with Bill (5-5-9) on CW. Since the signals seemed quite strong, we tried nbfm, but the QSB simply tore up the FM. We could have made a voice contact, but CW was much easier! (SSB would have been good, but my 902 rig is CW/FM only [class C final]) I also worked Don on 433.1 ssb.

The trip was a lot of fun and got Bill grid number 24 on 902. Next I will have to find Bill one more grid!!

73 Phil, W6HCC

Band Slam in Dn82ce

Early on the morning of 8-6-02 (very early! 0300) I traveled to DN82CE. It is a 2.5-hour drive from my QTH. The route took me through Cheyenne and out highway 85 to Torrington WY. (What a desolate stretch of road) At Torrington, I took US26 to Merrill NE. There I turned north on NE rt. 29. The turnoff in Merrill is easy to miss (I did). There is no stop or traffic light. You just turn where the arrow points to rt. 29. At this hour of the morning (0530) there is daylight? and no sun. I ran through some ground fog in the North Platt valley. On rt. 29 you climb the north side of the Platt valley for about 15 miles. I found a farmer's road, which went to the top of a small hill, which had a wonderful view to the S-W (good NW-N-E also). There is a local mesa, which blocks W-NW. The first order of business was to get Bill (K0RZ) a contact from DN82. This completes his VUCC on 902 MHz. Congratulations Bill!! We had good signals on 433.1 and also on 902. Bills 902, nbfm signals were pinning the S meter. I also worked John (WD4MUO) from Flagstaff Park on 902. He was using Bill's 'loaner' rig and really sounded good. He was also pinning the S meter. While I was talking with Bill and John, I had a visit from the local farmer on his motorcycle. When I told him who I was and what I was doing he wished me well and left. He said he was concerned with environmentalists who have been cutting fences and 'running' his cattle. Later in the day, I had a nice 902 CW contact with Peter (KI0RN). If I had SSB, we could have used voice, but my class C final... The next band was 5760. We decided to do this band, because on the prior outing (DN73), we let conditions deteriorate too much and were unable to make the contact. Here we fared MUCH better. Signals were S9+20db and we had a very nice SSB contact. We noted very deep QSB on the signals, sometimes fading down

to S3. We decided to press the good conditions and moved down to 3456. Signals were very good there too and the QSB was a little less severe. We had a nice SSB contact. On to 2304!! (Last time we had to use high speed CW and hope for good bursts) Signals today were strong and steady. We had a good SSB contact!

After we had run all the 'low bands', we decided to try 10368. By now, it was 0730 and we wondered if 10 GHz would still be 'open'. The band was open in spades!! We had good SSB signals. S6-S9+. I also worked Don (N0UGY) from his home on 10 GHz with good signals. We rag-chewed on 10 GHz! Bill asked me to look for his beacons. I tuned to Thorodin and it was S9-S9+10db. It was steadier and had less QSB than Bill's signal from home. I also found Bill's home beacon. It was right at the noise, but on peaks it came up to S4-S5 and I could easily copy the identifier. Conditions seemed to be holding up, so Don got on 3456 from home. His signals were S9+ and we had a good SSB contact. (After I got the right preamp selected in my tri-band front end!) We tried 2304 with Don, but his signal was right at the noise level and voice contact was not possible.

I want to thank everyone who got on the air and made this a great outing.

We really had a 'Grand Slam' (Band Slam!) by making contacts on 6 bands from 433.1 to 10368.

73 Phil, W6HCC

From the email on contest ---

You can mention that I extended my personal 10 GHz record out to 612 miles. That was the high point of the weekend for me. Mel WA6JBD

Here's a bit about our trip. On Sunday Dennis WA6NIA, Scott (our logger and friend), and I met up in Solvang with Tony KC6QHP to try 24 GHz narrow band and go to Figueroa Mt. After a pleasant breakfast we met up at the mission. We spent about an hour trying to find each other and fix rigs, and eventually we worked each other over good distance. The rigs still need some work but we made it. We packed up and headed North out of Solvang and Los Olivos on Figueroa Mt. Road. We think we passed Michael Jackson's place on the way. We were in Dennis's Denali, which just about covered the width of the pavement. We missed the turn to Figueroa and went on to Ranger peak. In a saddle we got a good shot from the South-to-South East. (No Frazier). The road has lots of scenic spots and is easy to drive. A forest permit is required. The three of us set up and worked Mexico without much fuss. Also worked several others to the South. Signals were very acceptable considering the day. We had a compromised view to the North and tried to work Dave, but couldn't work him. Sta. Inez Peak and the ridge had fog spilling over it most of the day, which is why we decided to go to Figueroa Peak. We worked as many as we could, broke camp and went down to Gaviota. Not much luck there. Went further down to Goleta and worked several people but not Mexico. Summerland was locked up when we got there. By the time we got to Ventura we were so tired of slow traffic, we went for the barn. We didn't make as many points as we would have liked to but we did some great DX (almost 1,000Km), had a great time together and drove over some of the prettiest countryside on the coast. The rigs and power supplies worked well as did the liaison radio. Our thanks to the Mexico group for a job well done and for having lots of patience. Looking forward to the next weekend. 31 Q's, 17 stations, about 9600 points. Doug K6JEY

Had a lot of fun. Did 9 locations for the two days. Worked the Mexico guys all 9 positions. Got 14,900 points just talking to them. It will be great if we get several guys down there next month. Glenn, KE6HPZ

First Contest Weekend at K6OW: 26 unique call signs, 45 QSOs total. I was trying out some new locations. Saturday from Signal Peak, Orange County near Newport Beach and Sunday from Burnt Peak in the center of the "brown triangle" formed by Castaic, Lake Hughes and Gorman. I plan to rove on the next contest weekend. Thanks to all that came out, especially those who drove and those who drove a lot! 7-3s, K6OW

Here is a brief summary, following last night's SD MW Group meeting and a phone call to N6XQ, with XE2/W6YLZ visiting Jack. These are all on 10 GHz:

The Baja Heroes of 2002-1 report Frank, XE2/WB6CWN, had 62 QSOs with 28 Unique Calls, while Miguel, XE2/W6YLZ had 60 QSOs with 26 Calls. Frank's best DX was 1100 km! Muy Bueno!!! (sorry, can't make upside down !!!s)

Jack, N6XQ, OPERATING FROM HIS LIVING ROOM SOFA, worked 35 Stations and had 62 QSOs.

Brian, KF6C operated from DM13KC with a new homebrew rig and made 2 QSOs while solving several equipment issues.

John, WB6BKR made 11 QSOs from Mt Soledad including two with the Baja Guys and DX of 630 km.

Art, KC6UQH operated from Soledad Saturday and Fairview Park Sunday. Total of 27 Qs including the 2 Baja from Soledad. Art likes the Fairview Park location which includes a public restroom. The same exact spot where the Picnic has been held.

Pete, W6DXJ operated from Soledad Saturday and made a dozen QSOs including the two to Baja.

Dan, KF6NKC operated from DM12JV with 1 QSO on 10 wideband fm

Jim, NE6O made two QSOs from Soledad with equipment problems, one on 10 NB and one on 10 WB.

Ed W6OYJ operated Saturday from Soledad and Sunday from Frazier Mtn. Made 67 QSOs with 38 Stations. Worked the two XE2s from both locations. Best dx was 916 km from Frazier to Baja.

This was in spite of the miserable drizzle, which made contesting much harder for all participants. Lets hope for DRY AIR and good ducting in September.

73s from Ed, W6OYJ

I would like to suggest that preference be given to those who can work a DX station on SSB quickly while conditions are good before going to CW. This would maximize the contacts being made rather than having to wait until the signal is down and a CW contact for everyone.

I did work 17 contacts from Fairview Park in Costa Mesa (DM12AP) on Sunday. Site works well up to Frazier, Santa Barbara, PV and Signal Hill. I also worked N6XQ on a bounce from Wilson. Suggest others try this site, picnic tables for gear, restrooms and a nice park setting. No direct path South, but several opportunities for bounces in that direction. A drier weather day and this site should do very well. Art, KC6UQH

I'm not a member of SBMS, but I went with several members to contest, so I guess this is okay... I'm probably going to join soon too....anyway...

Saturday: It was a typical foggy day along the Santa Barbara coastal region, which was disappointing, because it usually means wildly changing conditions. I packed my equipment into my pickup and drove up to Gaviota State Beach, where I met up with Bill WA6QYR and Chuck WA6EXV who were having bad luck at the location. I managed to make a few contacts, to San Diego and so forth on 10 GHz. We managed to hear Mexico, though were not able to be heard by them (Frank WB6CWN and Miguel W6YLZ). Chuck's rig was giving him problems and the horn he brought seemed to not have enough gain for the poor weather conditions. After making a short distance contact with him, Bill and I took off and headed towards Goleta Beach Park. Fog conditions were substantially better there, and we made a good number of contacts including very strong signals to Mexico. Doug K6JEY, Dennis WA6NIA, and friend Scott showed up, as we were packing to go to Sea Cliff, between Ventura and Carpinteria. The Sea Cliff location proved to be a tricky shot to Mexico. I worked Frank on SSB, but had to use narrowband FM to work Miguel who's LO seemed to be having problems.

Sunday: After having met with JEY and company on Saturday, we had discussed doing 24 GHz NB work in the Santa Ynez Valley, as the humidity was much lower. We set up across a valley just at the edge of Solvang and completed two contacts (my first ever). 24 GHz rigs as it seems, are tricky beasts, as all three of us had one

problem or another. Mine seemed to be with receive sensitivity, which was solved by using my slightly higher output LO/2 drive which I had wired to the up converter module. So after a quick repair with some extra connectorized .085 cables that I had brought (for just such an event) I drove back to the hill and made the contacts with open waveguide. We next drove to Figueroa peak, (or vicinity thereof) which sits on a ridge of mountains just on the other side of the Santa Ynez Valley from Santa Ynez Peak. Yet again I ran into rig problems as my 10 GHz system would not receive. After a few minutes of troubleshooting, I narrowed it down to a broken wire supplying power to my LO synthesizer. After a quick mountaintop-soldering job, I was back on the air and made my best DX ever on 10 GHz of 581 miles.

Overall: I learned a few lessons this weekend. Namely, that it's a good idea to take as many spare parts and tools as possible, because things break. Another lessons is that if I want to let my equipment bounce

around in the back of a pickup, its wise to secure wires, and cables with strain and vibration relief so that solder joints don't crack. It was a great first weekend, even though the weather stank, and thanks to Frank

and Miguel for all the points! Also, thanks to all the guys from the SBMS with whom I tagged along.

-Tony Long KC6QHP

I drove from the hot (100+) desert to sit on the wet/cool beach in the fog. Managed to come up with 24 stations and 9800 km from 5 stops. Will remember to bring flashlight for dark to dark operations. Rovers can't sit and wait 8 hours for the fog to clear. Have to move to make points. Bill WA6QYR

73's Bill

K6RRA photos of events he attended---

The San Diego Microwave Group (below) in Kerry's (N6IZW) garage for a meeting. Lots of stuff goes on at the meetings with topics and show and tell from microwave through light.



Ken, WB6DTA and his 10 GHz rig at the Tune Up Party in June. See article in the newsletter on the event.



Many dishes and rigs were at the Tune Up Party in Fairview Park. Each had different ideas on how it should be done. That is the interesting happenings at SBMS. Different hardware shows up and someone puts it together for a rig. Not like your friends because your piece is different than his, so you do it a different way.



Chuck Houghton, WB6IGP (below) of the San Diego Microwave Group during his visit to the July SBMS meeting. Chuck is a big source of parts and information on how to make rigs and test equipment using the surplus parts.



The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

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